

COPY

WHAT IS CLAIMED IS:

1. 1. A piezoelectric/electrostrictive device comprising:

a substrate including a support portion constituted of a thick member and two arm portions constituted of thin-plate members extended from the support portion; and

a driving member including at least one pair of electrodes and one piezoelectric/electrostrictive layer which are disposed on at least one arm portion,

wherein a plurality of grooves is formed in at least a surface positioned on an extending-direction side of said at least one arm portion in the support portion.

2. The piezoelectric/electrostrictive device according to claim 1, further comprising a plurality of grooves formed in a surface disposed opposite to the surface positioned on said extending-direction side of the arm portion in the support portion.

3. The piezoelectric/electrostrictive device according to claim 1, wherein the plurality of grooves formed in the surface positioned on said extending-direction side of the arm portion in the support portion extends in a direction through which an airflow that has collided with a support portion surface is capable of blowing.

COPY

4. The piezoelectric/electrostrictive device according to claim 2, wherein the plurality of grooves formed in the surface positioned on said extending-direction side of the arm portion in the support portion extends in a direction through which an airflow that has collided with a support portion surface is capable of blowing.

5. The piezoelectric/electrostrictive device according to claim 3, wherein tips of the plurality of grooves formed in the surface positioned on said extending-direction side of the arm portion in the support portion is formed to extend to an edge of the direction through which the airflow is capable of blowing in the support portion.

6. The piezoelectric/electrostrictive device according to claim 1, wherein the plurality of grooves formed in the surface positioned on said extending-direction side of the arm portion in the support portion is formed to extend in a direction perpendicular to the direction through which the airflow that has collided with the support portion surface is capable of blowing.

7. The piezoelectric/electrostrictive device according to claim 1, wherein the plurality of grooves is arranged at an interval of 10 to 500 μm on the average.

8. The piezoelectric/electrostrictive device

COPY

according to claim 2, wherein the plurality of grooves formed in the surface disposed opposite to the surface positioned on said extending-direction side of the arm portion in the support portion is arranged at an interval of 10 to 500 μm on the average.

9. The piezoelectric/electrostrictive device according to claim 1, wherein a depth of the plurality of grooves is 5 to 100 μm .

10. The piezoelectric/electrostrictive device according to claim 2, wherein a depth of the plurality of grooves formed in the surface disposed opposite to the surface positioned on said extending-direction side of the arm portion in the support portion is 5 to 100 μm .

11. The piezoelectric/electrostrictive device according to claim 9, wherein the depth of the plurality of grooves is formed with a fluctuation at a standard deviation of 3 μm or more.

12. The piezoelectric/electrostrictive device according to claim 10, wherein the depth of the plurality of grooves formed in the surface disposed opposite to the surface positioned on said extending-direction side of the arm portion in the support portion is formed with a fluctuation at a standard deviation of 3 μm or more.

COPY

13. The piezoelectric/electrostrictive device according to claim 1, wherein a length of a portion of the arm portion projecting from the support portion is 2.5 mm or less, and a thickness in a direction perpendicular to said extending direction of the arm portion in the support portion is 0.5 mm or less.

14. The piezoelectric/electrostrictive device according to claim 2, wherein a length of a portion of the arm portion projecting from the support portion is 2.5 mm or less, and a thickness in a direction perpendicular to said extending direction of the arm portion in the support portion is 0.5 mm or less.